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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,662	07/13/2001	Yasuhito Inagaki	09792909-5081	5976

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EXAMINER

KORNAKOV, MICHAEL

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/905,662

Applicant(s)

INAGAKI ET AL.

Examiner

Michael Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 9-11 and 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-16 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 6-16 in Paper No. 8 is acknowledged. With regard to election of species, a telephone call was made to Applicants' representative, Mr. D. Metzger, esq., on 05/20/2003 to clarify the election, provided by Applicants in Paper No.8. The election of a single disclosed specie recited by claim 8 and a single disclosed specie recited by claim 13 has been affirmed. Therefore, claims 1-5, 9-11 and 14-16 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim.
2. Claims 6-8, 12 and 13 are examined on the merits.

Drawings

3. Figure 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Specification

4. The disclosure is objected to because of the following informalities: Page 7, line 24 indicates Fig.1, and recites the relationship between time and etching rate.

Apparently, Fig.3 should be indicated.

Appropriate correction is required.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 6 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 29 and claim 33, each one individually, of copending Application No. 09/985396. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claim 29 and claim 33 of copending Application recite an apparatus for cleaning a substrate with an aqueous solution of ammonium fluoride and hydrogen fluoride at certain ratios, the said apparatus comprising a substrate cleaning bath stored with said

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cleaning solution, and a replenishing means for replenishing the cleaning solution in said substrate cleaning bath with water.

The instant claim 6 recites a substrate cleaning apparatus, which comprises essentially the same structural elements, namely a substrate cleaning bath with cleaning liquid comprising at least aqueous solution of ammonium fluoride, and liquid feeding means (reads on "replenishing means") for feeding a liquid comprising at least water.

It is noticed here, that the instant claim 6 does not specifically indicate the presence of hydrogen fluoride in the aqueous cleaning solution, however the utilized in this claim term "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements. See, e.g., *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); **Ex parte Davis**, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

Having essentially the same structural elements, as described in claims 29 and 33 of copending Application, the apparatus of the instant claim 6 is fully capable of storing aqueous solutions of ammonium fluoride and hydrogen fluoride with certain wt.%

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ratios and replenish these solutions with water, as provided by claims 29 and 33 of copending Application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Examiner's comment

7. Claim 7 recites "measuring means for measuring characteristics of said cleaning liquid in **said substrate cleaning bath**". Claim 7 is interpreted in light of the instant disclosure, wherein the measuring means for measuring characteristics of the cleaning liquid, which is used for substrate cleaning in the cleaning bath are provided, as described on pages 12-14 and presented on Fig. 9 and 11.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

9. Claims 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Verhaverbeke et al (U.S. 6,261,845).

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Verhaverbeke teaches apparatus for wet processing a substrate, comprising a processing vessel with treatment solution, which can be utilized for cleaning or etching purposes, and wherein the treatment solution can be provided in static regime for soaking the substrate (col. 1, lines 8-13; col.5, lines 26-27; col.8, lines 15-20; col. 10, lines 17-29; col. 13, lines 11-14). The treatment solution of Verhaverbeke comprises ammonium fluoride or ammonium fluoride buffered hydrofluoric acid (col. 10, lines 27-28; col. 11, lines 25-29). The apparatus of Verhaverbeke also comprises liquid supply system and means for directing the treatment solution, which may include water (col.10, line 44-49) and ammonium fluoride, to the processing vessel (col.7, lines 22-27; col. 10, lines 17-19; Fig. 1) (reads on "liquid feeding means", as instantly claimed); measuring means for measuring flow rates in the cleaning liquid processing stream (reads on "characteristics of the cleaning liquid", as instantly recited) (col.6, lines 53-55); processing system for receiving the measured flow rates, manual or computerized calculating the concentration of chemicals (reads on "arithmetically processing a signal", as instantly claimed) (col.6, lines 45-52) and providing a subsequent processing stream in response to the calculated concentration of chemicals in the wet processing stream (col.18, lines 31-37).

Therefore, all the structural limitations of apparatus as per the instant claims 6 and 7 are met by Verhaverbeke.

10. Claims 6, 7, 8, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by JP8-334461.

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JP'461 describes wet treatment apparatus, which comprises substrate cleaning bath 1, containing aqueous solution of ammonium fluoride and hydrogen fluoride (EQ); liquid feeding means for feeding aqueous solution of ammonium fluoride (14); means for measuring refraction index of hydrofluoric acid (4) and an electronic computing system (7,12), which controls feeding from ammonium fluoride feeding means to substrate treatment bath, thus keeping the constant composition of the treatment reagent EQ (see Abstract; Fig.1 and 2; paragraphs 0005-0007, 0011, 0013-0016).

Therefore, all the structural limitations of apparatus as instantly claimed are met by JP'461.

11. Claims 6 is rejected under 35 U.S.C. 102(e) as being anticipated by JP9-22891.

JP'891 teaches wet processing device, which comprises substrate cleaning bath 3, containing aqueous solution of ammonium fluoride and hydrogen fluoride and liquid feeding means for feeding at least water to the cleaning bath with aqueous cleaning composition (See Abstract, Fig.3).

Therefore, all the structural limitations of apparatus as per instant claim 6 are met by JP'461.

12. Applicant should note that additional prior art cited in PTOL-892 shows general state of the art.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (703) 305-0400. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872 9310 for regular communications and (703) 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 2450.

M. Kornakov

Michael Kornakov
Examiner
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May 27, 2003